HAYDEN AREA REGIONAL SEWER BOARD

Protecting the Aquifer Since '88

10789 N. Atlas Road • Hayden, Idaho 83835 • Fax (208) 772-3863

Ken Windram, Project Manager
Phone (208) 772-0672

February 27, 2008

Mr. Brian Nickel
US EPA, Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

RE: HAYDEN AREA REGIONAL SEWER BOARD COMPLIANCE SCHEDULE

Dear Mr. Nickel:

At our meeting on January 16, 2008, you presented EPA procedures for evaluating permit limits and compliance schedules. Thank you for providing us this opportunity to respond to your information and the potential changes to the February 16, 2007, draft NPDES Permit. We previously addressed the constraints placed on the Hayden Area Regional Sewer Board (HARSB) for compliance with the proposed NPDES Permit in a table, which is attached as **Exhibit 1.** Those familiar with municipal (public) systems recognize that each entity has its own unique situations and local constraints to meet compliance, including financing through public-approved bond elections, local regulatory approval, and conformance with local Planning and Zoning regulations, to name just a few. The HARSB Board is committed to the accelerated program to protect the water quality in the Spokane River that was outlined in the draft Permits; however, enforcing the most stringent phosphorus limits in the nation in one permit cycle would place an impossible requirement on HARSB.

The third-party engineering review of the HARSB compliance schedule by the Sierra Club omitted Critical aspects of any public entity's steps to finance/implement a major capital project were omitted from the review. These aspects included:

- Engineering selection and negotiations of any design contracts
- Engineering reports
- Permitting issues (EPA, IDEQ, County)
- Regulatory agency review and approval
- Financing through public vote or bond issues
- Land acquisition
- Ultra-high efficiency biological, mechanical, and chemical process optimization for more than 99 percent compliance.

These omissions are probably due to a lack of understanding of local situations and regulatory and financial realities.

It is difficult to adequately outline the intricacies of complying with the proposed dynamic permit schedule in the NPDES Permit in a letter. The new, more stringent effluent limits for ammonia, phosphorus, and BOD will require major changes in the technology and strategies for providing cost-effective upgrades. One challenge will be to incorporate existing wastewater treatment plant infrastructure for secondary capacity and land application into the long-term program of advanced technology for biological, chemical, and filtration for phosphorus removal and advanced pathogen reduction redundancy for reuse. Financing the upgrades to meet the new requirements must be approved by existing users, and HARSB must provide a mechanism to finance capacity to serve projected flows. HARSB is proposing to prepare a comprehensive evaluation of these issues.

HARSB received proposals for a Wastewater Treatment and Disposal Master Plan and Financial Implementation Plan on February 8, 2008. The scope is outlined in the attached **Exhibit 2.** HARSB is currently reviewing the proposals and anticipating a contract will be negotiated in March or April of 2008. This study will incorporate the output of related studies, including the Rathdrum Prairie Wastewater Master Plan and the update to the IDEQ Guidelines for Land Application over the Rathdrum Prairie. When the HARSB Master Plan is completed, a Financing and Implementation Plan will be prepared that will provide a framework for bonding and financing upgrades to provide capacity and meet NPDES Permit limits. The current enabling authority of the Joint Powers Agreement that HARSB was organized under does not provide HARSB with the capability to finance improvements with bond issues. Therefore, HARSB cannot take on debt. HARSB must coordinate with the three participating entities (the City of Hayden, the Hayden Lake Recreational Water and Sewer District, and Kootenai County) for financing. This creates additional coordination and time. The Financing and Implementation Plan will include a thorough review of institutional and financing options for HARSB and possibly changing the authority to a municipal, district, or other entity. Financing and implementation will be completed in the later phases of the Wastewater Master Plan and will be finalized by January or February of 2009.

To better present the complexity of the inter-related steps necessary to comply with the new NPDES Permit, we submit the attached EPA NPDES Permit compliance matrix, **Exhibit 3**, which outlines the considerations in the upgrades that would not be apparent to an outsider reviewing the proposed schedule for HARSB. This matrix clearly shows that there is no float time or contingency in the Permit schedule. Key aspects of the matrix will be discussed below.

Rathdrum Prairie Wastewater Master Planning

The City of Hayden (a member of HARSB), City of Post Falls, City of Rathdrum, and Kootenai County initiated planning in 2006 to finalize the Areas of City Impact (ACI), which will extend into unincorporated areas of Kootenai County. The study will evaluate the entities' ability to provide wastewater service to the existing corporate limits, the existing ACIs, and the expanded ACI into the County. A critical component is the water quality issues in the Spokane River for discharge of treated wastewater. The draft NPDES Permit issued early in 2007 is the foundation for the upper limits of loading (CBOD, TSS, phosphorus, and ammonia) to the Spokane River. The ability to treat and discharge wastewater will be the major factor limiting the abilities of these entities to grow in the future. Ultimate flows from Post Falls and Rathdrum will be determined with input from the cities, county, and public input. The ultimate flow must be considered in the selected phosphorous strategy. It is unlikely that the flow data will be available until after 2008.

Another major related issue is that Idaho and Washington regulatory agencies and the public have expressed considerable concern over the long-term status of Rathdrum Prairie Aquifer quality and quantity. The "Idaho Ground Water Rules" designate the Rathdrum Prairie as a "Sensitive Resource Aquifer" (attached as **Exhibit 4**), which required no degradation. This designation places severe restrictions on land application and reuse over the aquifer. A phosphorus control strategy that includes reuse or land application must account for the compliance with regulations as they relate to the Rathdrum Prairie Aquifer.

HARSB was/is the only point discharger that was ***forced*** to utilize a "no-discharge" strategy during the critical low-flow Spokane River period in the original NPDES Permit. HARSB purchased land and diverted treated effluent to irrigate agricultural crops. In the long term, reuse of treated effluent over the sole source (sensitive resource) aquifer is a critical part of HARSB phosphorus reduction plan. An IDEQ-funded study is in progress to update the "Guidelines for Land Application and Reuse over the Rathdrum Prairie Aquifer." This report must be completed and adopted by IDEQ before the role and rules governing wastewater reclamation and reuse over the Rathdrum Prairie Sensitive Resource Aquifer can be implemented into the phosphorus controls and no-discharge strategy for HARSB. HARSB has been and will continue to be the forerunner in implementing reuse of reclaimed wastewater. IDEQ adoption of the new guidelines is expected before February of 2009. The matrix shows that until the guidelines for reuse over the Rathdrum Prairie sensitive resource aquifer are completed, the extent of pre-treatment and land required for reuse and land disposal during the no-discharge period and the interim cannot be finalized.

As previously stated, it is difficult to present a description of the issues HARSB must face when complying with the proposed Permit schedules. The matrix (attached **Exhibit 3**) provides a visual appraisal of the issues and strategies to comply with the

EPA Permit schedule. A detailed analysis of this compliance schedule will be included in the 2008 HARSB Wastewater Treatment and Disposal Master Plan and also, as required, in the one-year report to EPA. In preparing the matrix, we found that the 9-year schedule in the draft HARSB NPDES Permits for phosphorus compliance is realistic and includes no float time for delays in financing through bond issues, regulatory review, appeals, land acquisition, or any problems that might result in delays in building the necessary facilities.

In reviewing the EPA information provided at the meeting with IDEQ and HARSB on January 16, 2008, we concur that the ammonia compliance date for 10.0 mg/L can be moved from six years to three years. Three years is required because of the inconsistent performance of the activated sludge system to reliably nitrify. The historical ammonia data presented in the attached **Exhibit 5** shows abnormal variation in influent and effluent ammonia concentration. The influent ammonia is occasionally over 100 mg/L, which is a double typical value for raw sewage. HARSB operators are installing composite samplers at the key pump stations to locate the source of high ammonia. HARSB must locate the source of the high ammonia, implement an industrial pre-treatment program, and achieve source control and reduction within a 3-year period. In addition, there may be some operational limitation in the two existing oxidation ditches to effectively nitrify the ammonia to less than 10 mg/L. This should be resolved when the third oxidation ditch has been completed and a one-year performance period is completed by September of 2009. With these issues, HARSB can still reduce the compliance date from six years to three years. The new Oxidation Ditch No. 3 will increase the capacity to 2.4 mgd. HARSB requests that the 2.4 mgd capacity be utilized to calculate loadings, especially if there are any delays in the Permit.

As presented on the matrix (see attached **Exhibit 3**), we have identified the critical path for meeting the 2.0 mg/L phosphorus compliance date of three years. Reducing phosphorus in the effluent from the average of 4.3 mg/L (see attached **Exhibit 6**) to less than 2.0 mg/L will require chemical addition. This will increase the aerobic sludge processing by 20 to 50 percent. The existing biosolids (sludge) processing system, including storage and dewatering, is close to capacity and could not process additional solids generated by chemical phosphorus precipitation. HARSB will evaluate options for biosolids dewatering, storage, and disposal as part of the HARSB Master Plan. Biosolids upgrades will be completed as soon as possible, but is projected just before year three of the Permit schedule when phosphorus removal to 2.0 mg/L is required.

As presented on the matrix (see attached **Exhibit 3**), startup of the chemical phosphorus removal must be completed just before the compliance date in year three for 2.0 mg/L of phosphorus. This provides little time to verify the ability of the upgraded sludge dewatering system to effectively dewater the chemical sludge.

However, HARSB will live with the schedule of three years for compliance with 2.0 mg/L phosphorus in the draft Permit.

Effluent phosphorus data is presented in the attached **Exhibit 6**. Of interest is that only the effluent phosphorus data up to May 2005 is included in **Exhibit 6**. A research Pilot Study of continuous backwash filters was started after May 2005 by Blue Water Technologies (BWT) for removal of phosphorus from secondary effluent. HARSB leased a portion of the treatment plant site to BWT but has no control over their operation, data interpretation, or collection techniques. They can treat between 0.3 mgd and 0.15 mgd and discharge ferric chloride in the reject to the HARSB headworks. The combined effect of the reject and blending their effluent with HARSB effluent has caused atypical concentrations of phosphorus in the HARSB effluent. Considering the inability of coordinated process control with the HARSB secondary treatment plant and independent operation, including startup and shutdown of the BWT pilot operation, the information from the Pilot Study is of limited value to the HARSB phosphorus removal program. The lease with BWT expires in August of 2014 (see attached **Exhibit 7**). Prior to the expiration of the lease, HARSB cannot rely on BWT as part of HARSB filtration strategy.

Other significant system issues include infiltration/inflow (I/I), which has been an ongoing problem that creates peak flows, possibly exceeding the capacity of the treatment plant clarifiers several times each year. I/I goals will be developed in the Wastewater Treatment Master Plan. I/I reduction is a long-term process of flow studies, testing, correction, and follow-up documentation of reduction. The effects of I/I program will affect all process design.

As identified in the matrix (see attached **Exhibit 3**), Oxidation Ditch No. 3 and Secondary Clarifier No. 4 are under construction. These facilities will help to address ammonia and BOD. However, biosolids (sludge) handling, outfall upgrade to the Spokane River, headworks upgrade, I/I control, land application expansion, and force main extensions to a land application system are all components of the capacity expansion, which need to be completed prior to the fourth year of the Permit. This will place a substantial burden on HARSB just to finance and construct these needs. When these facilities are completed, the next phase of phosphorus control (i.e., filters and/or biological phosphorus removal) for the more stringent limits to 1.2 mg/L can be implemented. The new IDEQ land application guidelines for the Rathdrum Prairie will determine if nitrogen reduction to less than 10 mg/L is required. Upgrading a biological nutrient removal system may also be added to the upgrade to meet the phosphorus reduction strategy.

In addition to the treatment and reuse challenges, the draft Permits also require surface water quality monitoring in the Spokane River, even if HARSB is not discharging. This does not seem reasonable or appropriate. Therefore, we also

respectfully request the surface water monitoring be removed from the Permit if HARSB is not discharging to the Spokane River, including the month of October.

Our comments on the original draft NPDES Permit still stand. We also want to include our comments on the Washington Dissolved Oxygen TMDL, which is attached as **Exhibit 9**. HARSB reserves the right to appeal the Washington TMDL and complete the draft Use Attainability Analysis (UAA). The UAA clearly documented that the natural condition standard in Washington's Water Quality Standards is not appropriate. There are other issues in the TMDL that did not adequately consider financial impacts, and an Environmental Impact Statement (EIS) should have been prepared on this document.

Also, the HARSB should not be required to perform NPDES testing and river water quality studies during periods they are not discharging to the river.

The HARSB new Oxidation Ditch and Clarifier will be on line by June 2008 which will increase the treatment plant capacity to 2.4 mgd. HARSB requests that all New NPDES Permit Effluent pounds per day limits be based on the 2.4 mgd design capacity and the draft NPDES daily concentrations.

Please review our documents. If you have questions, please contact us.

Sincerely,

Hayden Area Regional Sewer Board

Ken Windram, Project Manager

Enclosures